

INTERNATIONAL SEARCH REPORT

International Application No
PCT/US2004/030579

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 B05C5/02 B29C47/16

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 B05C B29C

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2003/116881 A1 (NELSON JAMES M ET AL) 26 June 2003 (2003-06-26)	1, 2, 4-8, 10, 11, 13-17, 29-33
Y	paragraph '0095! - paragraph '0114! claims; figures	3, 18-28
X	US 5 587 184 A (LEONARD WILLIAM K ET AL) 24 December 1996 (1996-12-24)	1, 4-10, 13-17, 29, 31-33
X	US 3 241 183 A (TYRNER JOSEPH M) 22 March 1966 (1966-03-22)	1, 10, 29, 33
	the whole document	
	the whole document	
	-/-	

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

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Date of the actual completion of the international search

12 November 2004

Date of mailing of the international search report

25/11/2004

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 4 984 533 A (SHIBATA NORIO ET AL) 15 January 1991 (1991-01-15) the whole document	3,18-28
A	EP 0 412 187 A (SUMITOMO HEAVY INDUSTRIES) 13 February 1991 (1991-02-13) the whole document	1-33
A	US 5 067 432 A (LIPPERT HARRY G) 26 November 1991 (1991-11-26) column 2, line 46 - column 4, line 20	1-33
A	US 2001/002281 A1 (NORIO SHIBATA ET AL) 31 May 2001 (2001-05-31) paragraph '0070! - paragraph '0075!	1-33

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/US2004/030579

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 2003116881	A1	26-06-2003	EP 1458545 A1 WO 03053655 A1	22-09-2004 03-07-2003
US 5587184	A	24-12-1996	US 5464577 A CA 2136932 A1 DE 69416811 D1 DE 69416811 T2 EP 0662386 A1 JP 8052782 A	07-11-1995 05-07-1995 08-04-1999 04-11-1999 12-07-1995 27-02-1996
US 3241183	A	22-03-1966	BE 657349 A CH 436688 A DE 1479931 A1 DK 112049 B GB 1020379 A NL 6414911 A SE 302842 B	16-04-1965 15-11-1967 14-05-1969 04-11-1968 16-02-1966 24-06-1965 05-08-1968
US 4984533	A	15-01-1991	JP 2056272 A JP 2081353 C JP 7106332 B DE 3927680 A1	26-02-1990 09-08-1996 15-11-1995 15-03-1990
EP 0412187	A	13-02-1991	EP 0412187 A1 DE 68906384 D1 DE 68906384 T2 US 4990078 A	13-02-1991 09-06-1993 12-08-1993 05-02-1991
US 5067432	A	26-11-1991	NONE	
US 2001002281	A1	31-05-2001	JP 11314065 A	16-11-1999